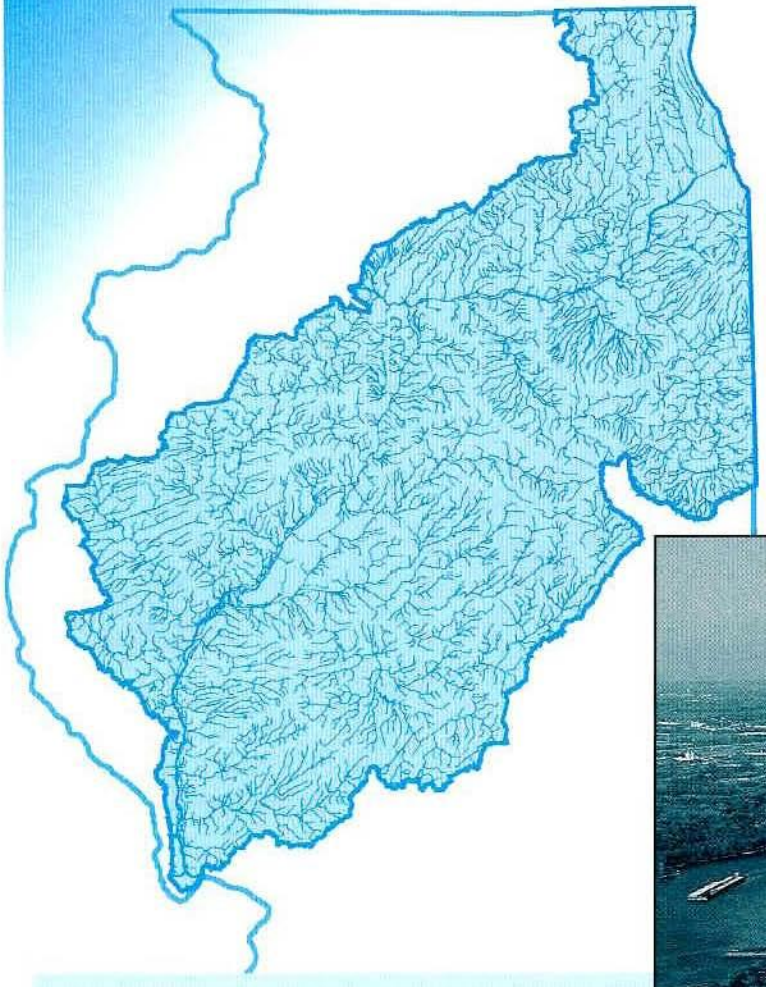
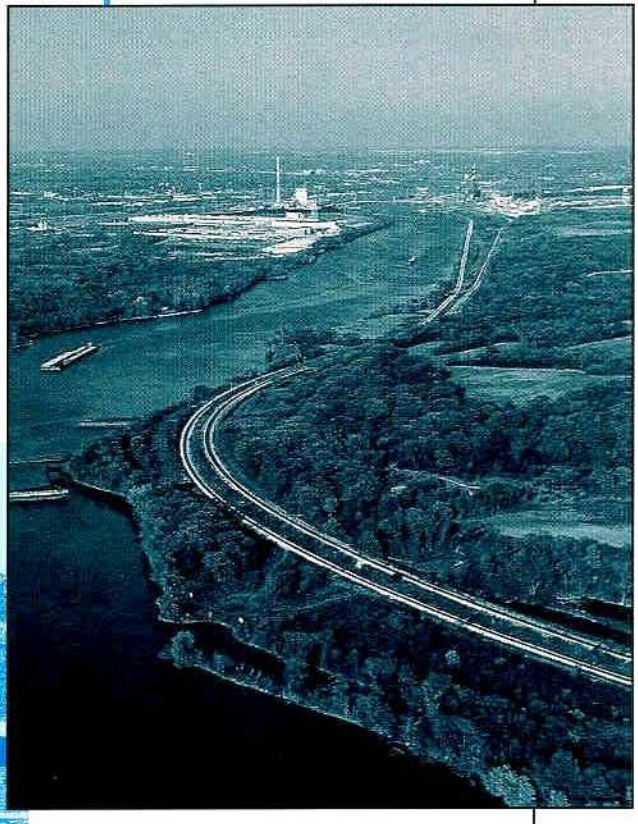
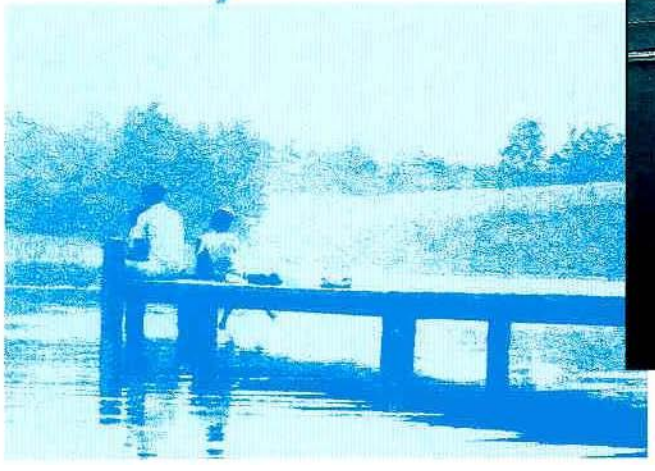
Integrated Management Plan for the

ILLINOIS RIVER WATERSHED







January 1997

The mighty Illinois River has been a tremendous resource our state,
First and foremost, it has bun a source of beauty and solace for us,
It total contribution to our economy--.from commercial fishing to recreational marinas to the shipment of grain and manufactured goods --simply cannot be quantified.

Whether we live in the Illinois River valley or live so for from the river that it is nothing more than a thin line on a map, all our lives have been touched by the Illinois River.

And now all of us must work to save and restore the river that has given so much to us.

For the past 12 months, more than 100 Illinoisans contributed thousands of hours to discussing and sometimes heatedly debating what steps are needed to preserve and improve the Illinois River watershed.

There is no single, easy "quick fix" for the river. The sometimes costly, long-term solutions were subject to intense debate by the diverse communities that care about and rely on the river.

The process leading up to the creation of this Integrated Management Plan was intended to bring about discussion and consensus--to find common ground. We succeeded in detailing 34 separate recommendations and steps for implementation, and I am grateful for the time devoted and contributions made by the many men and women from across the watershed.

Carrying out these recommendations will go a long way toward saving the Illinois River for future generations. In the future, we must monitor our progress and reevaluate our efforts, and we certainly must never forget just how important and fragile this river is.

We have everything to gain by implementing this plan and everything to lose if we do not care for this vital economic, ecological, and aesthetic resource.

Bob Kustra

Lieutenant Governor

State Of Illinois

Integrated Management Plan for the

ILLINOIS RIVER WATERSHED

LIEUTENANT GOVERNOR BOB KUSTRA
CHAIRMAN, ILLINOIS RIVER STRATEGY TEAM

ILLINOIS RIVER STRATEGY TEAM

Lieutenant Governor Bob Kustra, Chairman

Bruce Boyd, State Director
The Nature Conservancy, Illinois Chapter

Honorable Ray LaHood,
U.S. Congress, House of Representatives

Michael Platt, Executive Director
Heartland Water Resources Council

Ron Warfield, President
Illinois Farm Bureau

William Cullerton, Jr., President
The Cullerton Company

David Pfeifer, Professor
Principia, College

Robert Viets, President and CEO
CILCORP, Inc.

Wayne Zimmerman, Vice President
Caterpillar, Human Services Division

Advisors

Becky Doyle, Director
Illinois Department of Agriculture

Brent Manning, Director
Illinois Department of Natural Resources

ILLINOIS RIVER PLANNING COMMITTEE

Robert Anstine	Illinois Department of Commerce & Community Affairs	Springfield
Dale Aupperle	Heartland Ag Group, Limited	Decatur
Mark Beorkrem	Mississippi River Basin Alliance	Galesburg
Chet Boruff	Illinois Department of Agriculture	Springfield
Gretchen Bonfert	Green Strategies: Liaison to Lt. Governor Kustra	Springfield
John Braden	University of Illinois, Water Resources Center	Champaign
Debbie Bruce	Illinois Department of Natural Resources	Springfield
Joel Cross	Illinois Environmental Protection Agency	Springfield
Bud Davis	Caterpillar Industrial Products	Peoria
Nancy Erickson	Illinois Farm Bureau	Bloomington
Robert Frazee	University of Illinois Cooperative Extension Service	East Peoria
Andrew French	US Fish and Wildlife Service	Havana
Joel Grigsby	Sustainable Agriculture Society	Lincoln
Steve Havera	Illinois Natural History Survey	Havana
Karen Kabbes	Fox Waterway Agency	Fox Lake
Michael Klingner	Mississippi and Illinois Rivers Flood Control Association	Quincy
Paul Krone	USDA Natural Resources Conservation Service	Champaign
Sarah Perkins	Principia College, Great Rivers Land Preservation	Alton
Phil Peters	Northeastern Illinois Planning Commission	Chicago
Michael Platt	Heartland Water Resources Council	Peoria
Albert Pyott	The Wetlands Initiative	Chicago
Michael Reuter	The Nature Conservancy, Illinois Chapter	Peoria
Daniel Schneider	University of Illinois	Champaign
Kenn Shoemaker	US Army Corps of Engineers	Rock Island District
Richard Sparks	Illinois Natural History Survey	Havana
Norman Walzer	Illinois Institute for Rural Affairs	Macomb
Paul Werner	American Waterways Operators	St. Louis, Mo.
Karen Witter	Illinois Department of Natural Resources	Springfield

Cover photo by Max Schnorf
Document design and layout by the Illinois Department of Natural Resources

TABLE OF CONTENTS

INTRODUCTION

The Illinois River flows diagonally across the State of Illinois, beginning southeast of Chicago and then joining the Mississippi River at Grafton, near St. Louis. Waters flow into the Illinois River from Lake Michigan, the Chicago River, and eight major tributaries:

- Des Plaines River
- Kankakee River
- Fox River
- Vermilion River
- Mackinaw River
- Spoon River
- Sangamon River, and
- LaMoine River.

Eighty percent of the lands that drain into the Illinois River (the "watershed") are in the State of Illinois. More than 90 percent of the state's population lives in this 55-county area, bounded by portions of McHenry County in the north, Iroquois County in the east, Calhoun County in the south, and Hancock County in the west. Because of the ways we have used the river and the land, the river has experienced both decline and recovery.

In many respects, the condition of the Illinois River has markedly improved--yet it must be more sustainable economically and ecologically. In fact, the National Research Council which is associated with the National Academy of Science and the National Academy of Engineering, named the Illinois River as one of three river-floodplain ecosystems in the United States that are priorities for restoration.

To know why there is concern about the Illinois River watershed today, it is essential to review the past.

PAST: During the last 100 years, the state's population, industrial and agricultural sectors, forests and prairies, rivers and streams, and the Illinois River itself experienced profound changes. In the 1800s, the bounty of the river was shared by all --unlimited hunting for waterfowl and furbearing animals, harvesting mussels for a booming button industry, and carving out slabs of ice in winter for refrigeration. In 1908, more than 2,000 commercial fishing operations harvested nearly 25 million pounds of fish. In subsequent years, as land along the river came into private ownership, conflicts arose, with historical accounts describing vigilante stand-offs on armed barges.

Because the laws determining ownership of land were clearer than those involving water, landowners built levees and drained their properly. By the 1930s, more than 100,000 acres of floodplains had been separated from the river and converted to agricultural production.

In the early 1900s, industrial and residential wastes from the Chicago region were directed south toward the Illinois River. The burgeoning growth in Chicago and other downstate cities resulted in releases of vast amounts of waste into the river from cities, industries and stockyards. This pollution decimated much of the river's fish, wildlife and vegetation.

Modifications to the river to accommodate the growing navigation industry began with construction of dams in Henry, Fulton, Brown, and Calhoun counties in the late 1800s. Dams were built to maintain a 7-foot deep navigation channel for large steamboats. From 1919 to 1939, the "Illinois Waterway" was built, which provided a 9-foot deep navigation channel through the Chicago River, Chicago Sanitary & Ship Canal, the Des Plaines River, and through a lock and dam system on the Illinois River, with eight navigation pools from Lockport to Alton.

By the 1950s, virtually all aquatic vegetation had vanished from the Illinois River and its backwater lakes, due to water pollution and modified water levels. As a result, fish, mammals, waterfowl, clams and other related life forms declined drastically. Without the vegetation, sediment was no longer anchored to the

bottom of the riverbed and lakes, but rather stirred up in the water by wind and boat movement. To this point in the state's history, agricultural productivity soared, as did population growth and urban growth. The increasing movement of soil from the land, due to channelized streams, eroding streams, and land conversion greatly increased the amount of sediment reaching the Illinois River.

PRESENT: Since the 1950s, agricultural practices have been modified to keep more of the productive soil in place. Industries and municipalities have markedly improved sewage and wastewater treatment methods under the Clean Water Act.

More than 60 million tons of commodities are shipped on the Illinois River annually; more than one third are farm products. Coal, iron, petroleum products, chemicals, steel, sand and gravel are also shipped on the river. Over 50 percent of the commercial traffic on the Mississippi above St. Louis comes from the Illinois Waterway. Illinois ranks third among the 50 states, behind Alaska and Louisiana, in domestic waterborne commerce.

As of 1995, more than three-fourths of the state's farmland is at "T", the tolerable rate of soil loss where soil building processes replace the amount of soil lost. Nearly half of the state's agricultural land is in the Illinois River Basin, where the rate of soil loss is below the state average. In the Upper and Lower Illinois River Basins, more than 4.2 million acres of cropland are in conservation tillage systems. The Illinois River and its backwater areas occupy about one-third of the floodplain (105,000 acres), of which 47,000 acres are in state and federal ownership and 34,000 acres are owned by private sporting clubs. Forests along the Middle and Lower Illinois River are among the largest remnant forest ecosystems in the state north of the Shawnee National Forest. Today, more than 20 communities rely on the waters of the Illinois and its tributaries for their drinking water, and sportfish and waterfowl populations are growing.

Despite the seemingly remarkable recovery, the futures of the watershed and river corridor are truly imperiled.

Each year 14 million tons of sediment are transported through the watershed. More than half of this sediment load is deposited in the Illinois River Valley, and the balance is carried to the Mississippi River. Most backwater lakes have lost more than 70 percent of their storage capacity, destroying wildlife and recreational areas. In northeastern Illinois, during a recent 20·year span, land conversion for residential purposes grew by nearly 50 percent while population increased by less than five percent. Erosion control is needed on 4.1 million acres of cropland in the Upper and Lower Illinois River Basins. Stormwater management is a vexing problem throughout the watershed. Sudden flooding, from both large and small storm events, occurs due to past alterations to speed water from the land. Swiftly moving waters take more sediment, carving away at stream banks. The sediment, coupled with unseasonal flooding, yield a river system less capable of "managing" its sediment through a natural pattern of deposition, drying and compaction. Operation and maintenance of the navigation system is increasingly difficult, due to accumulation of sediment in the channel and rapidly fluctuating water levels.

The diversity of interests and stakeholders throughout the watershed is evident in reviewing the history of the region. When issues and interests overlap and compete, disagreements often arise about which management approaches to take. Yet there is agreement that the future condition of the watershed of the Illinois River and its tributaries will greatly influence the region's capacity for navigation, recreation, economic prosperity, and ecological balance.

ILLINOIS RIVER VALLEY PARTNERSHIP

During the last several decades, concern about the future of the watershed and the river has increased. The need for a sustained, focused effort, involving diverse public and private interests, became apparent. In 1994, Lt, Governor Bob Kustra launched the Illinois River Valley Partnership, saying:

> "Phase One will focus on the selection of innovative and reproducible model projects. It is my hope that these efforts will be repeated throughout the Illinois River Valley ..." to enhance the river's capacity as a recreation, transportation, and wildlife habitat resource. [This initiative resulted in the publication of the *Directory of Model Projects and Model Approaches for the Illinois River Valley* in July 1995.]

"Then we will get on with developing an ecosystem restoration plan for the entire Illinois River system. We will consider alternative management strategies for ecosystem recovery and sustainability, and examine the economic constraints or benefits."[These statements refer to the development of this *Integrated Management Plan for the Illinois River Watershed]*

Lt. Governor Kustra convened the Illinois River Strategy Team, a group of leaders in business, agriculture, and conservation. They adopted the vision of "A NATURALLY DIVERSE AND PRODUCTIVE ILLINOIS RIVER VALLEY THAT IS SUSTAINED BY NATURAL ECOLOGICAL PROCESSES AND MANAGED TO PROVIDE FOR COMPATIBLE SOCIAL AND ECONOMIC ACTIVITIES

THE INTEGRATED MANAGEMENT PLAN: An integrated management plan considers and balances the needs of human communities and ecological resources, seeking solutions and remedies that are healthy for both. People who live and work in the watershed contributed to the plan with decision-making by consensus.

During 1996, nearly 150 Illinoisans participated in a year-long effort to develop and reach agreement on specific actions that now constitute this plan. Participants included members of the Illinois River Strategy Team, Illinois River Planning Committee, and six Action Teams (see Appendices).

The Plan contains 34 recommendations and is divided into six sections. **In the Corridor** addresses the Illinois River and its associated backwater lakes and floodplains. The other sections address issues throughout the watershed: **Soil & Water Movement, Agricultural Practices, Economic Development, Local Action,** and **Education.** Each recommendation includes brief summaries of the implementation steps associated with it. A separate technical report is also available from the Office of Lt. Governor Kustra, which contains the full detail of the implementation steps, benefit and cost estimates for many recommendations, a summary of existing programs, and Action Teams' participants.

All recommendations are based on the following assumptions adopted by the participants:

- The Illinois River is a national treasure.
- Long-term economic health and ecological health are interdependent.
- Each generation desires a better quality of life for its children and successive generations.
- Understanding our relationship to the landscape shapes our concerns for it.
- Natural resources are intrinsically valuable.
- Responsible stewardship is the key to our future quality of life.
- Natural processes provide guidance for ecological improvement.
- Education with sound information provides a foundation for wise decisions.
- Progress from committed group effort can surpass any individual results.
- Individuals are responsible for their actions.
- By their actions, individuals make a difference.

All recommendations meet the following criteria adopted by the participants:

- Efforts must be based on planning and grassroots coalition-building that includes local citizens and all levels of government.
- Both the public interest and private property rights must be recognized, all actions must strive to maintain a balance between the two.
- All actions must appropriately reflect scientific and economic data, as well as possess practical applications.
- Efforts should focus on areas that currently possess the highest ecological integrity and hold the greatest potential for recovery. It also must be recognized that great benefits to the system may arise from addressing stresses in highly altered areas.
- Priority should be given to voluntary and incentive-based actions.

- Actions should be consistent with ecosystem-based management strategies that are being developed at the local, state and regional levels; as well as serve as a template on a broader scale with the ecological and economic needs of the Upper Mississippi River Basin.
- Efforts should capture the natural and free energies of the system.
- All efforts must be based on the recognition of the importance of ecological phenomena.

FUTURE: In considering the future of the watershed of the Illinois River and its tributaries, participants identified the greatest threats and opportunities:

Threats:
- the prior alteration of natural patterns of water and sediment movement, and
- the previous lack of commitment to the long-term shared interest of the people and the land.

Opportunities:
- the fact that the river still has the ability to "heal," with our help, and
- the belief that we possess the collective will to solve environmental and economic problems.

Following this Integrated Management Plan, Illinoisans are invited to engage in local planning and look anew at the resources that we share upstream and downstream from one another, and how our actions affect the landscape. Realizing that changes throughout the watershed occurred over many years and as a result of the activities of millions of people, the solutions require a concentrated approach, with broad support and recognition of the need for change. This plan is a call for a new concept of our home, our town, our county, and our role in the watershed as stewards not only of the landscape, but also as stewards of the water.

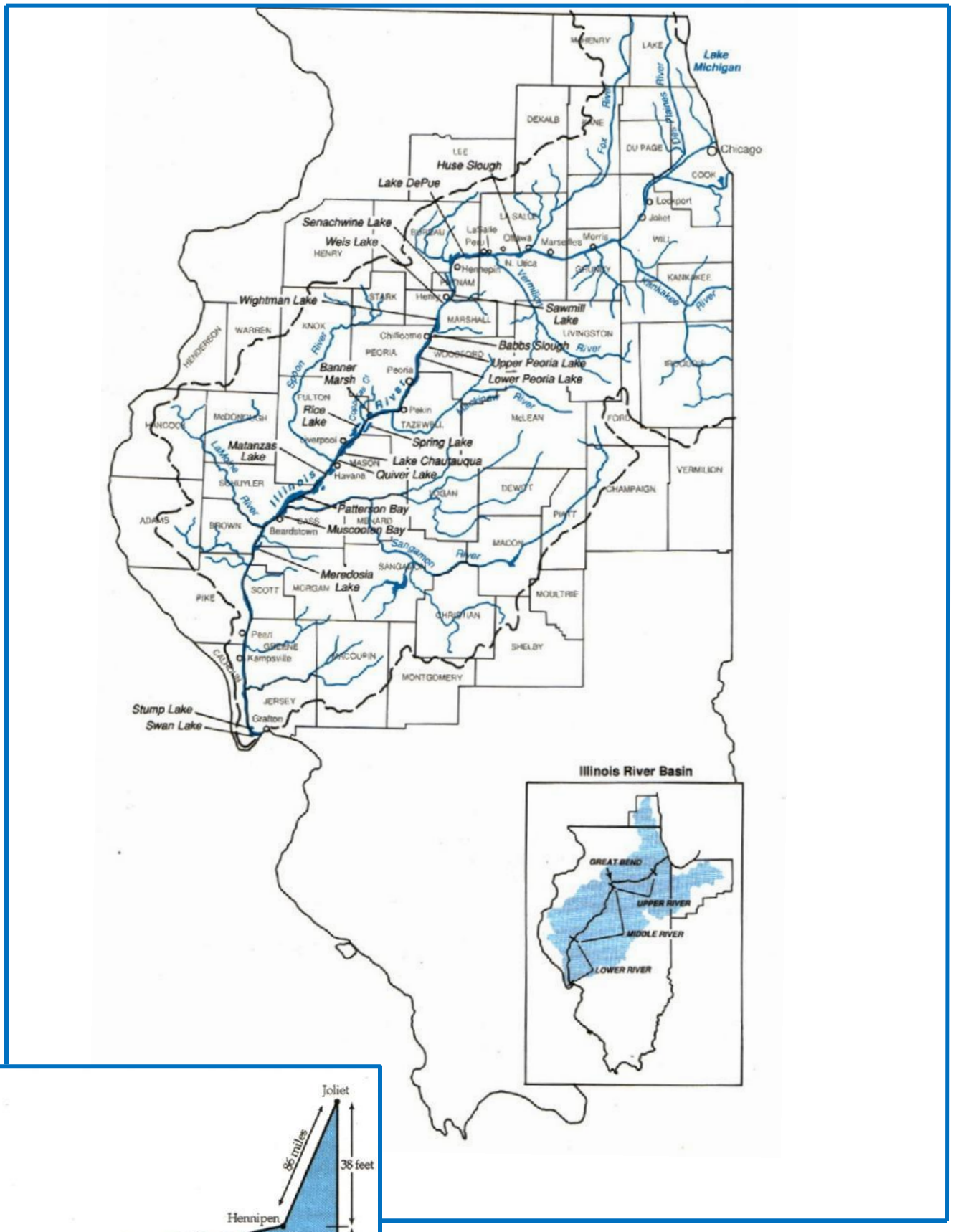
The Flood of '93 and flooding again in '95 made the tremendous power of nature evident to all of us. While massive amounts of rainfall contribute mightily to flood events, it is our altered landscape and channelized streams throughout the watershed that strongly influence what happens to the rainfall. The key to reducing our susceptibility to other flood events is to better understand the factors that contribute to such events and to manage water when it is less powerful and more diffuse. Voluntary actions across the watershed, with technical assistance and incentives, occur one parcel at a time and one stream segment at a time.

Participants determined that the success of this plan can be measured against these objectives:

1) Healthy levels of abundance, distribution, and diversity of plant and animal communities.
2) Restoration of highly-eroded streams: one percent by the year 2000; ten percent by the year 2010.
3) In all stream segments, the attainment of water quality standards and, every ten years, a ten percent improvement in the Index for Biotic Integrity (a state index of biodiversity related to water quality).
4) Reduce the river's deviation from the natural hydrograph (volume, depth, and duration of water flows).
5) For floods with 2-5 year frequencies, reduction of peak flows to the river by 2-3 percent.
6) A viable economy that enhances the ecological value of the watershed through high-quality job creation.
7) A measurable reduction of the amount of sediment entering the Illinois River and its tributaries.

Completion of this report is just the beginning. The Illinois River Strategy Team is committed to implementation of the plan and future evaluation of progress throughout the watershed of the Illinois River and its tributaries, from Chicago to Alton.

Now we must see that these written recommendations become reality. Seize those that are important to you, as a developer… farmer ... city planner ... elected official ... scientist ... parent ... landowner ... conservationist ... entrepreneur ... volunteer ... educator ... or whatever your vocation or avocation may be. Be a partner with individuals and organizations that share the opportunities and responsibilities that this plan offers. As a starting point, please turn the page to key recommendations identified by the Illinois River Strategy Team.



The Illinois River Basin and the Gradients of the Illinois River.
The decline from Joliet to Hennepin (a) ranges from 1.14 to 2 feet
Per mile, while the gradient from Hennepin to Grafton (b)
Ranges from 0.12 to .2 foot per mile

Illinois State Water Survey

KEY RECOMMENDATIONS FOR THE ILLINOIS RIVER WATERSHED

Each item below is followed by a number--to guide the reader to the corresponding recommendation number in the plan.

Expand and revise voluntary cost-share programs for more flexibility and technical assistance to assist landowners/operators in establishing soil conservation and water quality practices on cropland and non-cropland areas (14).

Identify the causes of unnatural and natural water level fluctuations; disseminate results and implement solutions as appropriate (7).

Establish water level management programs throughout the watershed for sediment management, waterbanking, and flood crest reduction (8).

Enhance local awareness and capabilities to address watershed/water resource concerns through education and technical assistance and by providing funding for volunteer watershed management planning for each watershed. Planning funds would be a one-time allocation, likely expended during one or more years (27).

Encourage municipalities and counties to adopt and enforce comprehensive stormwater management ordinances tailored to address local needs and consistent with state-provided model ordinances and watershed plans (30).*

Implement regional strategies to protect, restore, and expand critical habitats through public/private partnerships, voluntary incentive programs, management agreements, and technical assistance:

- Lower Illinois River/Great Rivers confluence –upland/lowland forests, floodplain.
- Lower Middle Illinois River --floodplain and riparian areas.
- Upper Middle Illinois River --forested bluffs, forested and wetland floodplain/riparian.
- Starved Rock to Headwaters Confluence --potential floodplain habitat.
- Tributary headwaters in northeastern Illinois, in collaboration with local partnership councils.
- Key high-quality tributaries throughout the watershed (4, 33).

Build wetlands and other water retention capacity in urban and rural areas in the Illinois Basin, in collaboration with appropriate public landowners and volunteering private landowners (13).

Promote and implement cost-effective efforts for reducing soil erosion from forests, bluffs, woodlands, gullies, pastures, and streambanks (15).

Encourage compatible economic development in the Illinois River watershed by: identifying barriers on or contiguous to the river that impede waterborne, river-related, or river-located commerce and by working to remove or remedy these impediments to compatible development; identifying and marketing the economic benefits of the river to prospective investors; developing regional approaches to stimulate entrepreneurship, business expansion, and the establishment of non-traditional businesses (21).

Increase public awareness of the history of conditions in the Illinois River, past beneficial efforts, and the need to implement the recommendations in this Plan throughout the Illinois River watershed (34).

*This recommendation did not have unanimous support of the Illinois River Strategy Team (see page 20).

RECOMMENDATIONS

In the Corridor

1) *Encourage beneficial use of sediment through three options for use of dredge materials:*

- establish discharge ports through levees at intervals determined by the Corps of Engineers and interested levee districts (internal sediment basins could be cash rented and farmed in one to two years).
- use dredge spoil to strengthen and increase the internal/external thickness of levees along the Illinois River.
- create new islands and/or increase the topographic diversity of existing islands; floodplain plant communities.

2) *Implement backwater lake and side channel sediment management measures at selected locations:*

- determine which lakes are priorities in terms of local support, ecological diversity of the corridor; the past and future uses of the lake, as well as the amount, type, and quality of sediment present.
- review current lake management programs; develop appropriate sediment removal and disposal techniques.
- reduce sediment inflow into the priority lakes from the Illinois River and tributaries.
- restore wetlands along shorelines for stabilization and wildlife habitat.

Illinois Department of Commerce and Community Affairs

3) *Assess the feasibility of implementing a temporary drawdown in conjunction with scheduled maintenance of the navigation system to dry out and compact deposited sediments:*

- work with the Corps of Engineers and River Resources Coordinating Teams to identify opportunities within the long-term maintenance program.
- involve all stakeholders (navigation, water supply intakes, waste water treatment sites, marinas, recreational sites, etc.) in the planning of the event, area impacted, timing, duration, and notification.

4) *Implement regional strategies to protect, restore, and expand critical habitats through public/private partnerships, voluntary incentive programs, management agreements and technical assistance:*

- Lower Illinois River/Great Rivers conf1uence: upland/lowland forests, floodplain.
- Lower Middle Illinois River: floodplain and riparian areas.
- Upper Middle Illinois River: forested bluffs, forested and wetland floodplain/riparian.
- Starved Rock to Headwaters Confluence: potential floodplain habitat.

5) *Complete the ongoing work to determine the extent of shoreline erosion on the Illinois River due to boat-generated waves and pursue recommended controls or remedies accordingly:*

- conduct field experiments at representative sites on the Illinois River, considering bank composition, river bed material, suspended sediments, traffic characteristics, river stages, and recreational crafts of various sizes, drafts, and speeds.
- Determine the threshold of severe erosion and its relationship to wave characteristics.
- Recommend how site-specific information can be used for systemwide application.

6) *Evaluate the need for mandatory safety training and licensing for recreational boat operators on major waterways in the Illinois basin, particularly in relation to commercial barge traffic:*

- convene a group of representatives from insurance companies, marinas, navigation, Coast Guard, Corps of Engineers, and Department of Natural Resources with experience on the Illinois, Mississippi, and Ohio rivers.
- survey existing users regarding the current environment for boating safety on major waterways.
- implement any recommended actions for boating, barge, and jet ski operating procedures.

Illinois Department of Commerce and Community Affairs

Soil and water Movement

7) *Identify the causes of unnatural and natural water level fluctuations; disseminate results and implement solutions as appropriate:*

- determine the contribution of changing precipitation patterns.
- identify other causes of fluctuations during normal flow seasons.
- quantify effects of dam operations, releases from Lake Michigan and canals in northeastern Illinois, increased water yields from tributary basins, storage/conveyance capacity along main stem, and opportunities for water detention.
- evaluate why the frequency and stage of major floods are increasing.
- evaluate flood protection of infrastructure, voluntary floodway easements, flood design criteria and existing levees.
- support program to accelerate updating federal flood hazard maps in urban areas.
- assess feasibility and effectiveness of flood crest reduction through controlled flooding of selected areas.

8) *Establish water level management programs throughout the watershed for sediment management, water banking, and flood crest reduction:*

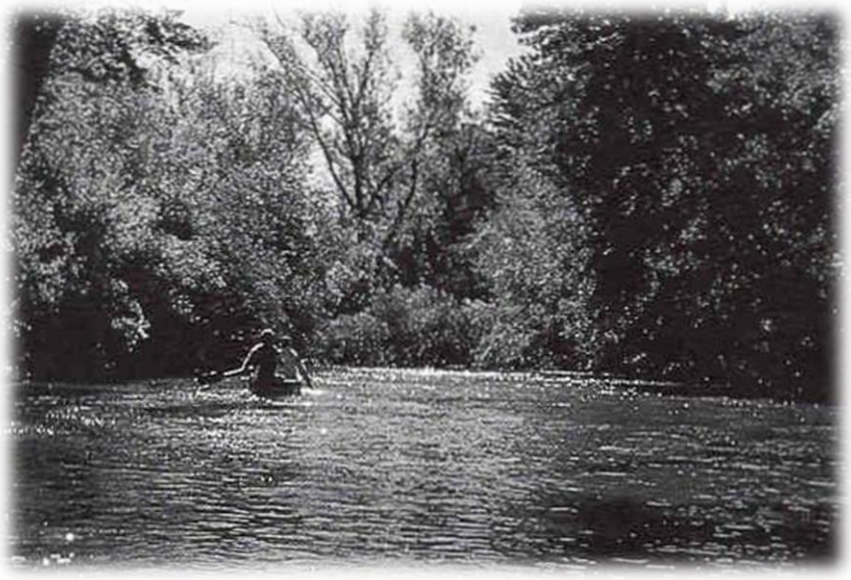
- convene a task force to investigate altering operation of the navigation system within the scope of the operating plan, to promote sediment management, native plant communities, and stable river levels.
- establish goals for water yields from tributary basins and subbasins, including water banking.
- establish experimental watersheds, involving public lands, volunteering private landowners, and various incentives, to compare stream dechannelization, wetland and riparian restorations, and small detention basin approaches.
- Determine whether real-time gauging data on tributaries would assist lockmasters in smoothing water levels.

9) *Provide incentives for selective dechannelization of tributaries on a voluntary basis:*

- Begin with willing landowners, particularly in the headwaters of tributaries.
- Give priority to degraded segments where adjacent land would buffer impacts.
- Maintain existing draining of contiguous areas.

10) *Stabilize unstable streams in rural and urban areas, particularly streams where the rate or magnitude of erosion yields abrupt or progressive changes in location, gradient, or pattern because of natural or human-induced changes:*

- establish assessment criteria for identifying unstable streams in each subwatershed.
- conduct site investigations to determine causes of instability.
- formulate management strategies using a combination of natural and engineered stabilization techniques.
- initiate low-cost, long-term monitoring at selected sites to evaluate effectiveness of remediation techniques.



Illinois Department of Commerce and Community Affairs

11) *Implement all actions called for in the Great Lakes Memorandum of Understanding, Including:*

- reduce discretionary diversions without exceeding water quality standards.
- Initiate leakage repairs at the Chicago River Controlling Works.
- Initiate Construction of a wall across the mouth of the Chicago River Turning Basin.
- Install one or more pumps at the lakefront for returning water to Lake Michigan.
- Install new velocity measurement devices at appropriate locations.

12) *Improve monitoring of water and sediment of Illinois streams:*

- involve units of local, state and federal governments that need water and sediment data.
- evaluate the quality and locations of current water and sediment monitoring and data collection
- improve the ability to evaluate and recommend reliable water and land use management options.

13) *Build wetlands and other water retention capacity in urban and rural areas in the Illinois Basin, in collaboration with appropriate public landowners and volunteering private landowners.*

- evaluate current wetland and surface water distribution in each sub-basin.
- determine goals for restoration/ creation of wetland and surface water capacity in each sub-basin.
- prioritize sub-basins for their restoration/creation and preservation/protection needs.
- evaluate existing programs and possible sources of funding for these efforts.
- evaluate existing public lands for present capacity and suitability for surface water retention.
- evaluate the capacity of local governments to raise funds to finance flood control facilities.
- monitor success of efforts in each sub-basin, including acres restored/enhanced, impacts on hydrology, water quality, sediment retention, wildlife habitat, aquifer recharge, and recreational activity.

Agricultural Practices

14) *Expand and revise voluntary cost-share programs for more flexibility and technical assistance to assist landowners/operators in establishing soil conservation and water quality practices on cropland and non-cropland areas:*

- provide for greater flexibility for construction seasons and particularly multi-year programs.
- develop program support for any gaps identified in eligible practices and cost-share availability for non-cropland areas, such as bluffs, streambanks, and wetlands.
- increase technical assistance for landowners by hiring additional soil and water conservation district staff.

Illinois Department of Commerce and Community Affairs

15) *Promote and implement cost-effective efforts for reducing soil erosion from forests, bluffs, woodlands, gullies, pastures, and streambanks:*

- recommend that the U.S. Department of Agriculture give higher priority for Conservation Reserve Program contracts for reforestation of most erosion-prone lands.
- provide funding for permanent livestock fencing materials on stream corridors for volunteering landowners.
- provide funding to cost-share interior fencing in forests, possibly through Conservation 2000.
- distribute more educational materials regarding the use of prescribed burning to improve forested lands.

16) *Increase funding for C-FAR (Council on Food and Agriculture Research) and encourage CFAR to give higher priority for funding of interagency research projects pertaining to soil conservation and water quality:*

- Develop coalition of interested groups and organizations to approach the C-FAR Steering Committee and Board of Directors.
- Coalition develops priority list of soil conservation and water quality projects for C-FAR and public education.
- Determine level of additional funding to seek from the general assembly.

17) *Expand voluntary farmer involvement with research teams in identification of problems and use of on-farm research trials for making no-till corn more viable, quantifying how Best Management Practices affect surface water quality, and solutions to non-cropland soil erosion:*

- organize local committees of agriculture agencies and organizations to establish a procedure for obtaining farmer/producer involvement in identifying problems for research and disseminating the research findings through local farmer groups, machine shed meetings, on-farm tours, and posting on the Internet.

18) *Seek legislation to improve tax incentives for activities such as establishing riparian filter strips along tributary streams, voluntary establishment of permanent vegetative cover on cropland and in riparian corridors, and comprehensive farm conservation planning and implementation:*

- assemble a task force representing concerns such as local and state tax revenue and the agriculture industry to evaluate incentives and potential reimbursements to units of local government.

19) *Expand existing programs to reach more producers with new conservation technology:*

- provide the Revised Universal Soil Loss Equation (RUSLE) in a user-friendly computer format for producers/ landowners and post on the internet
- provide more one-on-one technical assistance in nitrogen management, crop residue measurement, whole-farm planning, and conservation tillage.
- Expand use of field demonstrations, tours, and hands-on workshop to introduce new technologies.

20) *Investigate dedicated funding source(s) for soil erosion control and water quality initiatives to ensure sustained technical assistance and voluntary incentives.*

Illinois Department of Natural Resources

Economic Development

21) *Encourage compatible economic development in the Illinois River Watershed by:*

- develop a list of businesses using the river for commercial purposes and utilize that list as a resource to request information on current practices, successes and barriers and to distribute information on how the Council used that information to encourage compatible development opportunities.
- identify constraints on or next to the river that impede the transportation of products and other river-related commerce and work to improve or to remedy those constraints.

- identifying and marketing the economic benefits of the river.
- develop ways to stimulate entrepreneurship, help retain and expand businesses and encourage the establishment of non-traditional businesses related to the watershed.

22) *Create a one-stop-shop for the coordination of all local, state and federal water permits.*

23) *Encourage the development of outdoor recreational opportunities including hunting and fishing tours, hiking, bird watching and nature observation to stimulate local economies and to encourage landowners to preserve and to restore natural habitats:*

Illinois Department of Commerce and Community Affairs

- convene meetings of successful commercial recreational clubs and businesses from Illinois and other states.
- evaluate factors that encourage or impede the development of commercial recreational clubs and businesses.
- recommend actions to remove impediments or provide incentives or services to assist new and emerging commercial outdoor recreation businesses.

24) *Through established public economic development entities, like Illinois Department of Commerce and Economic Opportunity, Illinois Chamber of Commerce and USDA Rural Development, work to develop and promote business opportunities and technologies that utilize river basin resources in order to encourage business development in the watershed.*

25) *Provide development assistance to watershed communities, especially those lacking professional development staff, to improve the communities' ability to create economic.*

26) *Increase private sector production of native plant materials for use in restoration:*

- need network of producers because demand greatly exceeds supply and native plants reduce soil erosion.
- provide technical assistance to plant propagators so appropriate variability of plant genotypes exists for different regions of the state.

Local Action

27) *Enhance local awareness and capabilities to address watershed/water resource concerns through education and technical assistance and by providing funding for volunteer watershed management. Representatives of agencies with local offices that guide watershed management planning (such as soil and water conservation districts, Natural Resources Conservation Service, Cooperative Extension Service) to collaborate to:*

- allocate/leverage additional funding for each watershed plan (one-time allocation, likely spread across one or more years).
- assess the potential interest in planning within each watershed and the quality of the tributaries.
- determine an approach for prioritizing assistance offered to local communities.
- distribute watershed videos, demonstrations, programs throughout the area.
- assist in the creation of a local watershed steering committee which includes all interests in the area (including agricultural. Industrial, environmental, and planning interests, local government officials, property owners), with subcommittees to focus on separate issues.
- provide subcommittees with detailed economic and ecological information about the watershed, an outline for watershed plan development, model plans and standards for consideration during plan development.

Illinois Department of Natural Resources

28) *Develop a local watershed plan with full community participation. Steps include:*

- decide the appropriate watershed or subwatershed scale.
- in determining the scope of the plan, consider the community's economic, social, ecological, and aesthetic goals, flood-prone area delineation, natural resource inventories, flooding, pollution, resource degradation, opportunities, remediation and prevention actions, cost-effectiveness, priority-setting, and the development of specific action plans in these areas.
- identify problems in the watershed (and appropriate economic, ecological, and other criteria to evaluate the seriousness of the problem).
- public forums should be offered for consideration of and revisions to the draft plan, as well as the development of the time frame and steps for implementation.
- monitor implementation and assess economic and ecological consequences.
- inform the community about its role and report on plan implementation.

29) *The local steering committee selects an organizational structure, involving appropriate agencies, to ensure that implementation of the watershed plan has sustained attention in the future throughout the watershed:*

- review the structure of existing watershed management boards and stormwater commissions.
- identify participating agencies' jurisdictions, roles, responsibilities, and available resources for solving watershed problems.
- identify gaps in services and delivery and stakeholders who need to participate in implementation.
- "institutionalize" the organization through an informal alliance or formal alliance such as intergovernmental agreement or legislation.
- local institution formalizes its structure and operating procedures for future years' implementation of the plan.

Illinois Department of Natural Resources

30) *Encourage municipalities and counties to adopt and enforce comprehensive stormwater management ordinances that are tailored to address local needs and consistent with state-provided model ordinances and watershed plans. This recommendation is the key for establishing new standards, throughout the watershed, for reducing runoff. To accomplish this, local governments:*

- Review development-related, recurrent stormwater problems in the area.
- identify patterns of population density, land use, and water retention efforts in the area.
- review model ordinances and incentives that are available from the State of Illinois.
- distribute above information to the public, convene public forums for input, finalize and adopt ordinances.
- include enforcement, monitoring, and evaluation of economic and ecological consequences as components of implementation.*

31) *Encourage local government (or appropriate groups of local governments) to adopt and implement wastewater management plans, including septic system inspection and maintenance programs, beneficial reuse of wastewater, preventive maintenance, and other elements of facilities planning:*

- identify wastewater problems, visit demonstration sites to learn about treatment technologies.
- review model wastewater management plans, incentives, and other information provided by the Illinois Environmental Protection Agency.
- prepare or update facilities plans to provide for long-term wastewater treatment systems.
- make recommendations for on-site wastewater disposal zones for private systems and sewer use for public systems.
- distribute above information to the public and convene public forums for input.

*This recommendation did not have unanimous support of the Illinois River Strategy Team (See page 20).

32) *Reduce runoff rates throughout the watershed during the next* 15 *years, through remedial and preventive efforts. This recommendation is key for establishing new standards for reducing runoff and includes actions such as:*

- increase water retention and storage by volunteering landowners.
- provide economic incentives for water storage on prior-converted farmed wetlands during the non-growing season.
- use appropriate landscaping materials and techniques
- encourage upland drainage districts to control/reduce runoff.
- encourage soil and water conservation districts to provide water management/storage services.
- modify stormwater control systems and structures.
- adopt model ordinances tailored to local conditions. *

33) *Implement regional strategies to protect, restore and expand critical habitats through* public/private partnerships, *voluntary incentive programs, management agreements, and technical assistance:*

- tributary headwaters in northeastern Illinois, including innovative urban protection/restoration and interstate planning, in collaboration with local partnership councils such as those for the Fox River, Des Plaines River, Kankakee River, Chicago Wilderness, and the Midewin National Grassland.
- key high-quality tributaries throughout the watershed.

Illinois Department of Commerce and Community Affairs

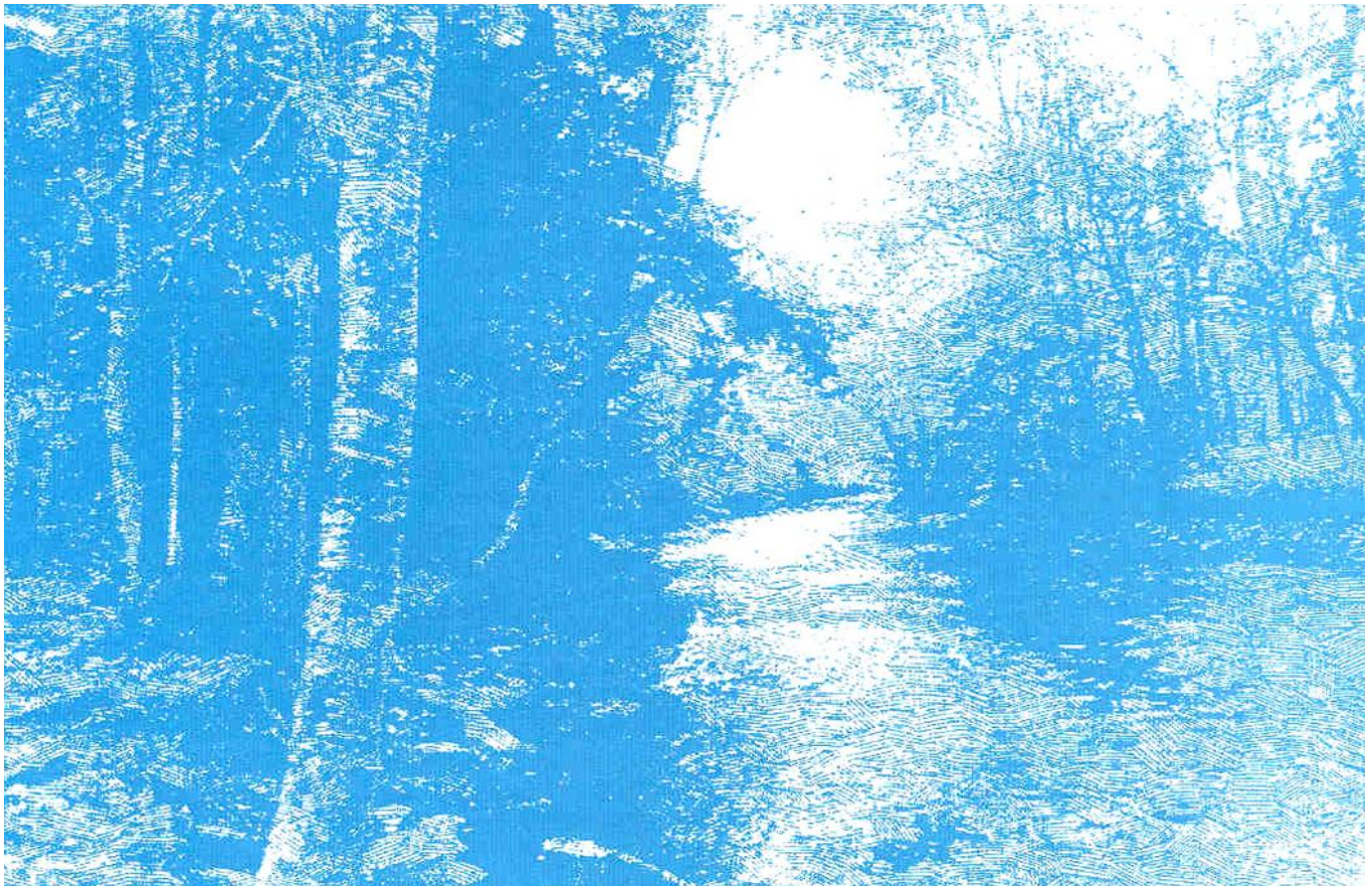
* This recommendation did not have unanimous support of the Illinois River Strategy Team (see page 20).

Education

34) ***Increase public awareness of the history of conditions in the Illinois River, the past efforts that have been beneficial, and the need to implement the recommendations in this plan throughout the Illinois River Watershed:***

- create a speakers bureau to connect presenters and audiences interested in the plan.
- provide more information about the strides that agricultural industry has made in soil and water conservation, as well as problems and solutions in the watershed--what individuals can do.
- increase media coverage and classroom exposure to farmer's best management practices and other activities that benefit the watershed.
- promote incentive-based programs for landowners restore/establish native vegetation, vegetative filter strips, woodlands, and permanent vegetation in riparian corridors.
- provide conservation education for absentee landowners.
- prevent the introduction of more exotic or invasive species
- create a comprehensive guide to Illinois River Watershed Information Sources.
- establish a "Friends of the Illinois River Watershed" organization.
- develop four elementary/secondary education modules that help achieve state standards and address the Illinois River watershed.
- create several mobile "hands on" educational exhibits about the river and its tributaries, to travel regions of the watershed.

APPENDICES



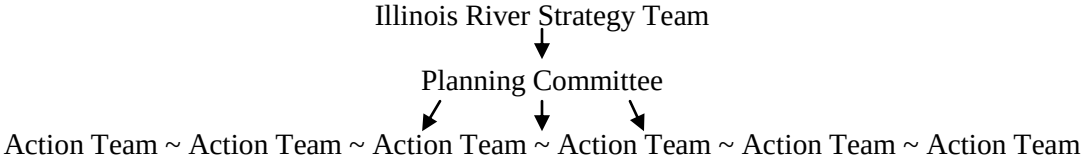
The Process Used to Develop the Integrated Management Plan for the Illinois River Watershed

S TATE OF ILLINOIS
OFFICE OF THE LIEUTENANT GOVERNOR

BOB KUSTRA
LIEUTENANT GOVERNOR

An Integrated Management Plan balances the needs of human communities and ecological resources, seeking solutions and remedies that are healthy for both. People who live and work in the watershed, directly and indirectly related to the river and its tributaries, contribute to the plan. The Illinois River Planning Committee and Action Teams shared primary responsibility for developing the plan for the ll1inois River Strategy Team.

Jan.-Feb. '96	***Planning Committee*** meets and evaluates economic and natural resource information
March'96	***Planning Committee*** identifies up to six issues to be addressed by separate Action Teams. Interested persons are encouraged to participate on Action Teams. To explore participation, write to Gretchen Bonfert, Liaison, Office of Lieutenant Governor Kustra, in Springfield (address below). Each team will address a specific issue and will Involve participants whose lives and careers are related to that issue.
April-June'96	***Action Teams*** meet several times to develop possible solutions within each issue.
July '96	***Planning Committee*** provides direction back to the action teams.
Aug.-Oct. '96	***Action Teams*** prepare action plans with suggested implementation schedules.
November '96	***Planning Committee*** considers results of Action teams and make recommendations to the Illinois River Strategy Team.
December '96	***Illinois River Strategy Team*** acts upon Integrated Management Plan recommendations.



The Illinois River Planning Committee's deliberations were facilitated by Mr. Lawrence Huggins, who has assisted communities in successfully addressing complex environmental, social, and economic issues in 12 states and in Canada. The Planning Committee and the Action Teams were coordinated by Ms. Gretchen Bonfert, Liaison to Lieutenant Governor Kustra.

The Illinois River Valley Partnership includes individuals and organizations who have signed on to receive periodic updates as well as notification of opportunities for public participation. Interested persons should send their complete address to the Illinois River Valley Partnership, c/o Lieutenant Governor Kustra's Springfield Office.

14 State Capitol Building Springfield, Illinois 62706
James R Thompson Center, Suite 15-200 100 West Randolph Chicago, Illinois 60601

ILLINOIS FARM BUREAU

"Improve the economic well-being of agriculture and enrich the quality of farm family life."

January 10, 1997

The Honorable Bob Kustra
Lt. Governor of Illinois
Springfield, IL 62706

Dear Lt. Governor Kustra:

Thank you for the opportunity to serve on the Illinois River Strategy Team. The efforts to plan programs for the Illinois River Basin and specific watersheds within the basin have been beneficial. You, the Strategy Team, members of the Illinois River Planning Committee and the six Action Teams have worked diligently and we appreciate your efforts.

Much progress has been made over the past two years in developing positive recommendations in the Plan. Some of these recommendations contain continued support for voluntary efforts in agriculture to improve water quality. Recommendations that stress the importance of cost-share incentives, education and technical assistance are also very positive. This approach will enhance ongoing local watershed efforts and effectively address natural resource issues.

We have reservations with recommendations that focus on the adoption of county ordinances to address water quality issues. Such ordinances place burdensome mandates on farmers and others. Farmers have no choice but to absorb increased costs brought about by regulation. "One-size-fits-all" ordinances often fail to recognize the variances found from one farm to another. Circumstances beyond a farmer's control, such as the weather, can make it extremely difficult to comply with an ordinance. We too often find that ordinances seek to inappropriately regulate farm practices instead of focusing on "outcome-based" programs.

The trends in agriculture derived through voluntary programs are good. Soil erosion in Illinois has been reduced by 30% from 1982 to 1992. We still have work to do, but we have shown that voluntary, incentive based programs can be effective. In voluntary watershed planning activities in counties like Pike, Macoupin and Champaign, farmers (working with a variety of local interests) are proactively addressing local natural resource concerns.

Relying on ordinances could pit agriculture against urban interests to achieve goals. A more positive approach is watershed planning with local people, urban and agriculture alike, working together to address natural resource issues. This approach could echo the work done by the Action Teams and capture the positive energy they generated. This energy could help various groups individualize, fine-tune and implement programs described in the Plan.

Once again, thank you for the opportunity to be on the Strategy Team. We look forward to helping implement the many positive elements of the Plan for the benefit of Illinois citizens.

Sincerely,

ILLINOIS FARM BUREAU

Ronald R. Warfield
President

ILLINOIS AGRICULTURAL ASSOCIATION®
1701 N. Towanda Avenue • P.O. Box 2901 • Bloomington, Illinois • 61702-2901
Phone: 309.557.2111 • Fax: 309.557.2559

Action Teams

MORE THAN 100 PERSONS RESPONDED TO THE INVITATION
TO SERVE ON ONE OR MORE Of SIX ACTION TEAMS,
EACH HAVING A SEPARATE FOCUS. *

Hydrology and Hydraulics: Recover the natural hydrologic function of the watershed to the extent possible.

Co-Chairs: Dr. Nani Bhowmik, Illinois State Water Survey, Illinois Department of Natural Resources
Mr. Gary Clark. Office of Water Resources, Illinois Department of Natural Resources

Plants, Fish and Wildlife: Develop a comprehensive program to identify, protect, and enhance representative natural communities in the Illinois River watershed in sufficient abundance to endure.

Co-Chairs: Mr. Bob Montgomery, Max McGraw Wildlife Foundation
Mr. Matt Nelson, The Nature Conservancy

Agricultural Practices: Reduce the rate and amount of agricultural runoff, soil erosion, and nonpoint source pollution by building upon the T by 2000 program, by adopting conservation practices, and by implementing land treatment methods.

Chair: Mr. Jon Hubbert, U.S. Department of Agriculture - Natural Resources Conservation Service

Economic Development: Identify and nurture community and business development that creates economic growth and enhances ecological stability.

Chair: Mr. Doug Dougherty, Rural Affairs Council

Citizens and Communities: Develop agreements with local governments, developers, and businesses to limit flood runoff, pollution, and soil loss.

Co-chairs: Mr. Ward Miller, Lake County Stormwater Management Commission
Dr. Richard Farnsworth, University of Illinois

Education: Develop an effective public awareness and education program, using technology to the fullest by focusing on multiple methods of media technology to reach diverse populations and involve the local community (in collaboration with marketing and education professionals).

Chair: Ms. Gretchen Bonfert, Green Strategies; Liaison to Lt Governor Kustra

*... Team members are recognized in the technical report. To obtain copies of the technical report, contact the Illinois River Valley Partnership, Office of Lt. Governor Kustra, 214 State House, Springfield, 1IIinois 62706, (217/782-7884 or 800/843-5848)

Printed by Authority of the State of Illinois
Printed on Recycled Paper Stock with Soy Based Ink
January 1997 --5M